**3GPP TSG- Meeting #**

**, , -**

|  |
| --- |
| *CR-Form-v12.2* |
| **CHANGE REQUEST** |
|  |
|  |  | **CR** |  | **rev** |  | **Current version:** |  |  |
|  |
| *For* [***HE******LP***](http://www.3gpp.org/3G_Specs/CRs.htm#_blank)*on using this form: comprehensive instructions can be found at* [*http://www.3gpp.org/Change-Requests*](http://www.3gpp.org/Change-Requests)*.* |
|  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Proposed change affects:*** | UICC apps |  | ME |  | Radio Access Network |  | Core Network | **X** |

|  |
| --- |
|  |
| ***Title:***  |  |
|  |  |
| ***Source to WG:*** |  |
| ***Source to TSG:*** | CT3 |
|  |  |
| ***Work item code:*** |  |  | ***Date:*** |  |
|  |  |  |  |  |
| ***Category:*** |  |  | ***Release:*** |  |
|  | *Use one of the following categories:****F*** *(correction)****A*** *(mirror corresponding to a change in an earlier release)****B*** *(addition of feature),* ***C*** *(functional modification of feature)****D*** *(editorial modification)*Detailed explanations of the above categories canbe found in 3GPP [TR 21.900](http://www.3gpp.org/ftp/Specs/html-info/21900.htm). | *Use one of the following releases:Rel-8 (Release 8)Rel-9 (Release 9)Rel-10 (Release 10)Rel-11 (Release 11)…Rel-16 (Release 16)Rel-17 (Release 17)Rel-18 (Release 18)Rel-19 (Release 19)* |
|  |  |
| ***Reason for change:*** | 23.288 clauses 6.2B.2, 6.2B.3, and 5B.1 (complemented by the respective additions in the service definitions that were agreed in S2-2306087) require that the NWDAF uses the Nnwdaf\_DataManagement\_Notify service to send Deletion Alerts (notifications) to the notification endpoints that were previously subscribed using the Nnwdaf\_DataManagement\_Subscribe service. These alerts include a storage transaction identifier, which can be used by the NF service consumer to fetch the data before they are deleted. |
|  |  |
| ***Summary of change:*** | Extended Nnwdaf\_DataManagement\_Notify to be able to send notifications about data deletion. |
|  |  |
| ***Consequences if not approved:*** | Not fulfilled stage 2 requirements. |
|  |  |
| ***Clauses affected:*** | 4.4.2.4.2, 5.3.5.2.2, 5.3.6.1, 5.3.6.2.3, A.4 |
|  |  |
|  | **Y** | **N** |  |  |
| ***Other specs*** |  | **X** |  Other core specifications  | TS/TR 23.288 CR 0726  |
| ***affected:*** |  | **X** |  Test specifications | TS/TR ... CR ...  |
| ***(show related CRs)*** |  | **X** |  O&M Specifications | TS/TR ... CR ...  |
|  |  |
| ***Other comments:*** | This CR introduces a backwards compatible feature in the OpenAPI file of the Nnwdaf\_DataManagement API. |
|  |  |
| ***This CR's revision history:*** |  |

\* \* \* \* First change \* \* \* \*

4.4.2.4.2 Notification about subscribed data

Figure 4.2.2.4.2-1 shows a scenario where the NWDAF sends a request to the NF service consumer to notify for event notifications (see also 3GPP TS 23.288 [17]).

NF service consumer

NWDAF

1

.

POST

{

notificURI

}

2

.

204

No Content or 200 OK

**Figure 4.4.2.4.2-1: NWDAF notifies the subscribed event**

The NWDAF shall invoke the Nnwdaf\_DataManagement\_Notify service operation to notify the subscribed event. The NWDAF shall send an HTTP POST request with "{notificURI}" received in the Nnwdaf\_DataManagement\_Subscribe service operation as Resource URI, as shown in figure 4.4.2.4.2-1, step 1.

The NnwdafDataManagementNotif data structure provided in the request body that shall include:

- the notification correlation identifier within the "notifCorrId" attribute;

- the timestamp of the notification within the "notifTimestamp" attribute;

- one of the following:

- data collected from data sources (e.g. SMF, NEF) in the "dataNotification" attribute;

- summarized data derived from events that occurred based on processing and formatting instructions in the "dataReports" attribute;

- information for fetching the contents of the notification in the "fetchInstruct" attribute;

- a deletion alert in the "delAlert" attribute, if the "EnhDataMgmt" feature is supported.

The NnwdafDataManagementNotif data structure provided in the request body may include:

- an indication that the NWDAF has requested a termination of the subscription within the "terminationReq" attribute.

Upon the reception of an HTTP POST request, if the NF service consumer successfully processed and accepted the received HTTP POST request, the NF Service Consumer shall store the notification and respond with HTTP "204 No Content" status code, or with HTTP "200 OK" status code and the NotifResponse data structure in the response body if the "EnhDataMgmt" feature is supported.

After the successful processing of the HTTP POST request:

- if the NWDAF requests the NF service consumer with the "fetchInstruct" attribute to retrieve the data, the NF service consumer may invoke the Nnwdaf\_DataManagement\_Fetch service operation to retrieve the notified data as defined in clause 4.4.2.5.

- if the NWDAF provided a deletion alert to the NF service consumer, the NF service consumer may invoke the Nadrf\_DataManagement\_RetrievalRequest service operation as defined in 3GPP TS 29.575 [27] clause 4.2.2.5, using the storage transaction identifier received within the "alertStorTransId" attribute of the "delAlert" attribute, in order to retrieve the data that are about to be deleted.

NOTE: The "alertStorTransId" attribute, which is used for retrieving data prior to deletion, does not have to be the same with or related to the storage transaction identifier that is assigned and returned during the storage of the data in the ADRF.

If errors occur when processing the HTTP POST request, the NF service consumer shall send an HTTP error response as specified in clause 5.3.7.

If the NF service consumer determines the received HTTP POST request needs to be redirected, the NF service consumer shall send an HTTP redirect response as specified in clause 6.10.9 of 3GPP TS 29.500 [4].

\* \* \* \* Next change \* \* \* \*

5.3.5.2.2 Operation Definition

Callback URI: **{notificURI}**

The operation shall support the callback URI variables defined in Table 5.3.5.2.2-1, the request data structures specified in table 5.3.5.2.2-2 and the response data structure and response codes specified in Table 5.3.5.2.2-3.

**Table 5.3.5.2.2-1: Callback URI variables**

|  |  |  |
| --- | --- | --- |
| **Name** | **Data type** | **Definition** |
| notificURI | Uri | The Notification Uri is assigned within the Individual NWDAF Data Management Subscription Resource and described within the NnwdafDataManagementSubsc type (see table 5.3.6.2.2-1). |

**Table 5.3.5.2.2-2: Data structures supported by the POST Request Body on this resource**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Description** |
| NnwdafDataManagementNotif | M | 1 | Provides Information about observed data. |

**Table 5.3.5.2.2-3: Data structures supported by the POST Response Body on this resource**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Data type** | **P** | **Cardinality** | **Response codes** | **Description** |
| NotifResponse | M | 1 | 200 OK | The receipt of the notification is acknowledged and a response with information about the planned action is provided. |
| n/a |  |  | 204 No Content | The receipt of the Notification is acknowledged. |
| RedirectResponse | O | 0..1 | 307 Temporary Redirect | Temporary redirection, during the event notification. The response shall include a Location header field containing an alternative URI representing the end point of an alternative NF consumer (service) instance where the notification should be sent. |
| RedirectResponse | O | 0..1 | 308 Permanent Redirect | Permanent redirection, during the event notification. The response shall include a Location header field containing an alternative URI representing the end point of an alternative NF consumer (service) instance where the notification should be sent. |
| NOTE: The mandatory HTTP error status codes for the POST method listed in table 5.2.7.1-1 of 3GPP TS 29.500 [6] also apply. |

**Table 5.3.5.2.2-4: Headers supported by the 307 Response Code on this resource**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI representing the end point of an alternative NF consumer (service) instance towards which the notification should be redirected. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target NF (service) instance towards which the notification request is redirected |

**Table 5.3.5.2.2-5: Headers supported by the 308 Response Code on this resource**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Data type** | **P** | **Cardinality** | **Description** |
| Location | string | M | 1 | An alternative URI representing the end point of an alternative NF consumer (service) instance towards which the notification should be redirected. |
| 3gpp-Sbi-Target-Nf-Id | string | O | 0..1 | Identifier of the target NF (service) instance towards which the notification request is redirected |

\* \* \* \* Next change \* \* \* \*

5.3.6.1 General

This clause specifies the application data model supported by the API.

Table 5.3.6.1-1 specifies the data types defined for the Nnwdaf\_DataManagement service based interface protocol.

**Table 5.3.6.1-1: Nnwdaf\_DataManagement specific Data Types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Clause defined** | **Description** | **Applicability** |
| NnwdafDataManagementSubsc | 5.3.6.2.2 | Represents an Individual NWDAF Data Management Subscription resource. |  |
| NnwdafDataManagementNotif | 5.3.6.2.3 | Represents a notification that corresponds with an Individual NWDAF Data Management Subscription resource. |  |

Table 5.3.6.1-2 specifies data types re-used by the Nnwdaf\_DataManagement service based interface protocol from other specifications, including a reference to their respective specifications and when needed, a short description of their use within the Nnwdaf\_DataManagement service based interface.

**Table 5.3.6.1-2: Nnwdaf\_DataManagement re-used Data Types**

|  |  |  |  |
| --- | --- | --- | --- |
| **Data type** | **Reference** | **Comments** | **Applicability** |
| DataCollectionPurpose | 3GPP TS 29.574 [26] | Represents the purpose for data collection, e.g. analytics or model training. |  |
| DataNotification | 3GPP TS 29.575 [27] | Represents data subscription notification from data source (e.g. AMF, SMF, UDM, NEF, AF). |  |
| DataSubscription | 3GPP TS 29.575 [27] | Represents data subscription from data source (e.g. AMF, SMF, UDM, NEF, AF). |  |
| DateTime | 3GPP TS 29.571 [8] | Identifies the time. |  |
| DeletionAlert | 3GPP TS 29.574 [26] | Contains information about data that are about to be deleted. | EnhDataMgmt |
| FormattingInstruction | 3GPP TS 29.574 [26] | DCCF formatting Instructions. |  |
| FetchInstruction | 3GPP TS 29.576 [28] | The fetch instruction indicates whether the data can be fetched by the consumer. |  |
| NfInstanceId | 3GPP TS 29.571 [8] | NF instance identifier. |  |
| NfSetId | 3GPP TS 29.571 [8] | NF set identifier. |  |
| NnwdafEventsSubscription | 5.1.6.2.2 | Represents an NWDAF analytics subscription. |  |
| NotifResponse | 3GPP TS 29.574 [26] | Contains information about the planned action upon receiving a notification. | EnhDataMgmt |
| NotifSummaryReport | 3GPP TS 29.574 [26] | Contains a summary report of processed notifications. |  |
| NotifyEndpoint | 3GPP TS 29.574 [26] | The information of notification endpoint. | EnDataCollect |
| ProcessingInstruction | 3GPP TS 29.574 [26] | DCCF processing Instructions. |  |
| SupportedFeatures | 3GPP TS 29.571 [8] |  |  |
| TimeWindow | 3GPP TS 29.122 [19] | Represents a time window. |  |
| Uri | 3GPP TS 29.571 [8] | URI. |  |

\* \* \* \* Next change \* \* \* \*

5.3.6.2.3 Type NnwdafDataManagementNotif

**able 5.3.6.2.3-1: Definition of type NnwdafDataManagementNotif**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Attribute name** | **Data type** | **P** | **Cardinality** | **Description** | **Applicability** |
| dataNotification | DataNotification | C | 0..1 | List of data subscription notifications.(NOTE 1, NOTE 3) |  |
| dataReports | array(NotifSummaryReport) | C | 1..N | List of reports with summarized data from multiple notifications received from data producer. (NOTE 1) (NOTE 2) |  |
| notifCorrId | string | M | 1 | Notification correlation identifier. |  |
| terminationReq | string | O | 0..1 | If set to "true", it indicates that the termination of the data management subscription is requested by the NWDAF, i.e. NWDAF will not provide further notifications related to this subscription.If absent, no termination is requested. |  |
| fetchInstruct | FetchInstruction | C | 0..1 | The fetch instruction indicates whether the data are to be fetched by the Consumer. This attribute may not be present in the response of a Fetch request.(NOTE 1) |  |
| delAlert | DeletionAlert | C | 0..1 | Information about analytics that is about to be deleted. This attribute may not be present in the response of a Fetch request. (NOTE 1) | EnhDataMgmt |
| notifTimestamp | DateTime | M | 1 | It represents time when NWDAF completes preparation of the requested data. |  |
| NOTE 1: One of these attributes shall be provided.NOTE 2: For every entry of the array, the "eventId" attribute shall not contain the "nwdafEvent" attribute.NOTE 3: If the NWDAF has received the notifications from another source without a timestamp, then the NWDAF adds itself a timestamp based on the time it received the notification in timeStamp attribute contained in dataNotification attribute. . |

\* \* \* \* Next change \* \* \* \*

A.4 Nnwdaf\_DataManagement API

openapi: 3.0.0

info:

 title: Nnwdaf\_DataManagement

 version: 1.1.0-alpha.2

 description: |

 Nnwdaf\_DataManagement API Service.

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externalDocs:

 description: 3GPP TS 29.520 V18.1.0; 5G System; Network Data Analytics Services.

 url: 'https://www.3gpp.org/ftp/Specs/archive/29\_series/29.520/'

servers:

 - url: '{apiRoot}/nnwdaf-datamanagement/v1'

 variables:

 apiRoot:

 default: https://example.com

 description: apiRoot as defined in clause 4.4 of 3GPP TS 29.501

security:

 - {}

 - oAuth2ClientCredentials:

 - nnwdaf-datamanagement

paths:

 /subscriptions:

 post:

 summary: subscribe to notifications

 operationId: CreateIndividualSubcription

 tags:

 - Subscriptions (Collection)

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/NnwdafDataManagementSubsc'

 responses:

 '201':

 description: Success

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/NnwdafDataManagementSubsc'

 headers:

 Location:

 description: >

 Contains the URI of the newly created resource, according to the structure

 {apiRoot}/nnwdaf-datamanagement/<apiVersion>/subscriptions/{subId}.

 required: true

 schema:

 type: string

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 callbacks:

 myNotification:

 '{$request.body#/notificURI}':

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/NnwdafDataManagementNotif'

 responses:

 '200':

 description: The notification is acknowledged and a planned action is provided.

 content:

 application/json:

 schema:

 $ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/NotifResponse'

 '204':

 description: No Content, Notification was succesfull

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 callbacks:

 Fetch:

 '{request.body#/fetchInstruct/fetchUri}':

 post:

 requestBody:

 required: true

 content:

 application/json:

 schema:

 type: array

 items:

 type: string

 minItems: 1

 description: Indicate the fetch correlation identifier.

 responses:

 '200':

 description: Expected response to a valid request

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/NnwdafDataManagementNotif'

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '406':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/406'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 /subscriptions/{subscriptionId}:

 put:

 summary: Update an existing Individual NWDAF Data Subscription.

 operationId: UpdateNWDAFDataSubscription

 tags:

 - Individual NWDAF Data Management Subscription (Document)

 requestBody:

 required: true

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/NnwdafDataManagementSubsc'

 parameters:

 - name: subscriptionId

 in: path

 description: Event Subscription ID

 required: true

 schema:

 type: string

 responses:

 '200':

 description: OK. Resource was succesfully modified and representation is returned

 content:

 application/json:

 schema:

 $ref: '#/components/schemas/NnwdafDataManagementSubsc'

 '204':

 description: No Content. Resource was succesfully modified

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '411':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/411'

 '413':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/413'

 '415':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/415'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

 delete:

 summary: unsubscribe from notifications

 operationId: DeleteNWDAFDataSubscription

 tags:

 - Individual NWDAF Data Management Subscription (Document)

 parameters:

 - name: subscriptionId

 in: path

 description: Event Subscription ID

 required: true

 schema:

 type: string

 responses:

 '204':

 description: No Content. Resource was succesfully deleted

 '307':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/307'

 '308':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/308'

 '400':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/400'

 '401':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/401'

 '403':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/403'

 '404':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/404'

 '429':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/429'

 '500':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/500'

 '502':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/502'

 '503':

 $ref: 'TS29571\_CommonData.yaml#/components/responses/503'

 default:

 $ref: 'TS29571\_CommonData.yaml#/components/responses/default'

components:

 securitySchemes:

 oAuth2ClientCredentials:

 type: oauth2

 flows:

 clientCredentials:

 tokenUrl: '{nrfApiRoot}/oauth2/token'

 scopes:

 nnwdaf-datamanagement: Access to the Nnwdaf\_DataManagement API

 schemas:

 NnwdafDataManagementSubsc:

 description: Represents an Individual NWDAF Data Management Subscription resource.

 type: object

 properties:

 adrfId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 adrfSetId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfSetId'

 anaSub:

 $ref: 'TS29520\_Nnwdaf\_EventsSubscription.yaml#/components/schemas/NnwdafEventsSubscription'

 dataCollectPurposes:

 type: array

 items:

 $ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/DataCollectionPurpose'

 minItems: 1

 description: >

 The purposes of data collection. This attribute may only be provided if user consent

 is reqiured depending on local policy and regulations and the consumer has

 not checked user consent.

 checkedConsentInd:

 type: boolean

 description: Indication that the NF service consumer has already checked the user consent.

 dataSub:

 $ref: 'TS29575\_Nadrf\_DataManagement.yaml#/components/schemas/DataSubscription'

 formatInstruct:

 $ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/FormattingInstruction'

 notifCorrId:

 type: string

 description: Notification correlation identifier.

 notificURI:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/Uri'

 notifEndpoints:

 type: array

 items:

 $ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/NotifyEndpoint'

 minItems: 1

 description: The information of notification endpoints.

 procInstruct:

 $ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/ProcessingInstruction'

 multiProcInstructs:

 type: array

 items:

 $ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/ProcessingInstruction'

 minItems: 1

 description: Processing instructions to be used for sending event notifications.

 suppFeat:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/SupportedFeatures'

 targetNfId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfInstanceId'

 targetNfSetId:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/NfSetId'

 timePeriod:

 $ref: 'TS29122\_CommonData.yaml#/components/schemas/TimeWindow'

 required:

 - notifCorrId

 - notificURI

 oneOf:

 - required: [anaSub]

 - required: [dataSub]

 NnwdafDataManagementNotif:

 description: Represents an Individual Notification.

 type: object

 properties:

 dataNotification:

 $ref: 'TS29575\_Nadrf\_DataManagement.yaml#/components/schemas/DataNotification'

 dataReports:

 type: array

 items:

 $ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/NotifSummaryReport'

 minItems: 1

 description: List of summary reports of processed notifications.

 notifCorrId:

 type: string

 description: Notification correlation identifier.

 terminationReq:

 type: string

 description: >

 It indicates that the termination of the data management subscription

 is requested by the NWDAF.

 fetchInstruct:

 $ref: 'TS29576\_Nmfaf\_3caDataManagement.yaml#/components/schemas/FetchInstruction'

 delAlert:

 $ref: 'TS29574\_Ndccf\_DataManagement.yaml#/components/schemas/DeletionAlert'

 notifTimestamp:

 $ref: 'TS29571\_CommonData.yaml#/components/schemas/DateTime'

 required:

 - notifCorrId

 - notifTimestamp

 oneOf:

 - required: [dataNotification]

 - required: [dataReports]

 - required: [fetchInstruct]

\* \* \* \* End of changes \* \* \* \*